REMARKS

The specification has been amended to correct errors in syntax. The abstract as been amended to conform with preferred United States style. Claims 1-27 and 30-38 have canceled. Claims 18 and 23-28 have been combined. In combining claims 18 and 23-28, the word "row" was deleted because there was no antecedent basis for it.

The Examiner is requested to approve changes to the Figures as indicated by red markings. The changes to the drawings enable the drawings to be consistent with the terminology employed in the specification of the application as filed. For example, the specification refers to codeword pairs as "CCP", but the drawings, as originally submitted, refer to the codeword pairs as "CP." Also, the term "CD" in box 32 should have been "CQ" as an inspection of the specification reveals.

Claim 28 includes the requirement for an N-bit look-up table which can be used to define the quality criteria by which a block of data is to be re-written or not. N is the number of combinations of ones and zeros which can occur in the quality bits for each block of data in a set. Applicants note that the foregoing limitation of claim 28 was not discussed in the office action. Indeed, the references of record do not appear to disclose such a look-up table. Consequently, claim 28 should have been allowed in the office action.

Claim 29 adds the requirement to claim 28 that the two quality bits are provided for each block of data in a set. The look-up table of claim 28 is required to be a 16-bit

lookup table to define the quality criteria by which a block of data is to be rewritten or not. The office action also fails to mention the foregoing limitation of claim 29.

Consequently, claims 28 and 29 are allowable over the art of record.

Claims 39-48 are added to provide Applicants the protection to which they are deemed entitled. Claim 39, upon which claims 40-44 depend, includes the step of determining if a codeword quadset should be rewritten by responding to stored plural bits for each codeword quadset that has been checked for errors. The stored plurality of bits are such that if a header is successfully read, there is a first combination of plural bits. In response to both codeword pairs of a quadset having as many as N error(s) (where N is at least one), the plural bits have a second combination. If only one codeword pair of a read track of a codeword quadset contains as many as N errors, the stored bits for both codeword pairs of the read track are set to a third combination. If none of the codeword pairs of a read track of a codeword quadset contains as many as N errors, the stored bits for both codeword pairs of the read track are set to a fourth combination. There is no art of record disclosing such a determining step.

Claim 45 more broadly indicates the determining step is based on whether each codeword quadset is acceptably recorded by evaluating each codeword quadset for header and codeword pair errors and combining the evaluations.

Claim 40 depends on claim 39 and indicates the value of N is changed for different operating conditions. Claim 41 indicates that for one specific embodiment, the value of I in claim 39 is 8. It is to be understood that there are other embodiments wherein the value of I can have different values. Claims 42 and 46 indicate the codeword quadset is re-written in response to the determination by the determining step.
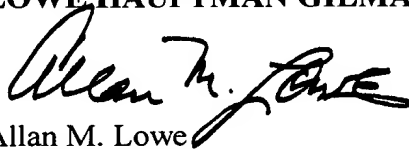
13

Claims 43 and 47 are directed to apparatus for performing the methods of claims 39 and 45 respectively. Claims 44 and 48 indicate that the apparatus of claims 43 and 48 are respectively in combination with a head arrangement for writing the data onto the tracks of the medium and for reading the data from the tracks of the medium after the data have been written onto the tracks by the head arrangement. Hence, the implication from claims 44 and 48 is that claims 43 and 47 are concerned only with the electronic or other arrangement necessary to perform the methods of claims 39 and 45.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance are respectfully requested and deemed in order.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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AML/pjc

QUALITY CONTROL IN DATA TRANSFER & STORAGE APPARATUS (30010276)
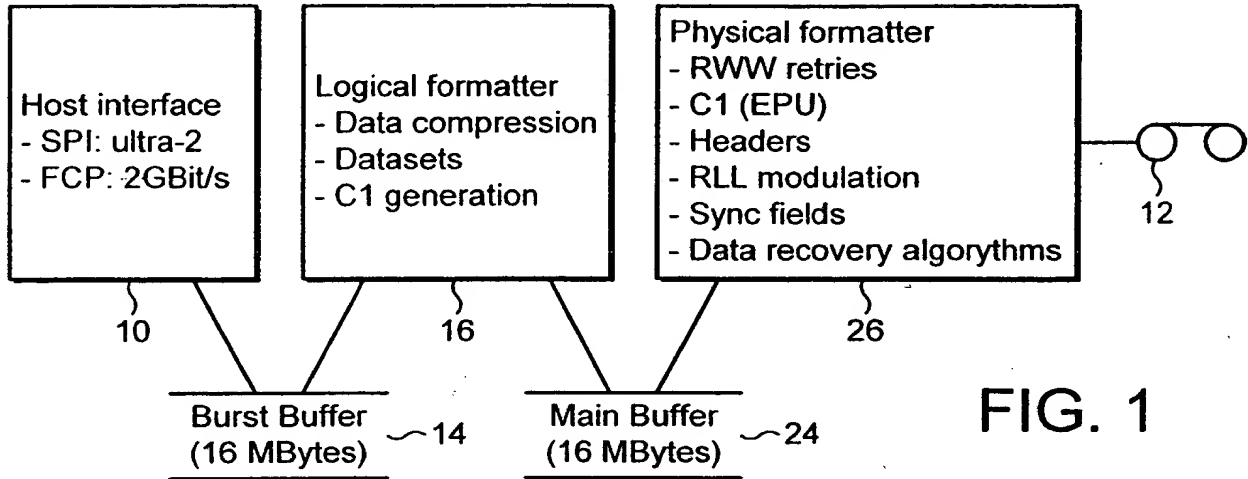
JORGE ANTONIO SVED, JONATHAN PETER BUCKINGHAM
annotated

Host interface - SPI: ultra-2 - FCP: 2GBit/s	Logical formatter - Data compression - Datasets - C1 generation	Physical formatter - RWW retries - C1 (EPU) - Headers - RLL modulation - Sync fields - Data recovery algorythms

10   16   26

Burst Buffer (16 MBytes) ~14

Main Buffer (16 MBytes) ~24

12

FIG. 1

	subdataset 0	subdataset 1		subdataset 15
0	∠ CP 0	∠CP 1		∠CP 15
1	∠CP 16	∠CP 17		∠ CP 31
110				
53				
54				
55				
63	∠CP 1008	∠CP 1009		∠CP 1023

C2 parity

C1 codeword pair

112

118~

10 bytes header	468 bytes user data	12 bytes hparity

FIG. 2

QUALITY CONTROL IN DATA TRANSFER & STORAGE APPARATUS (30010276)
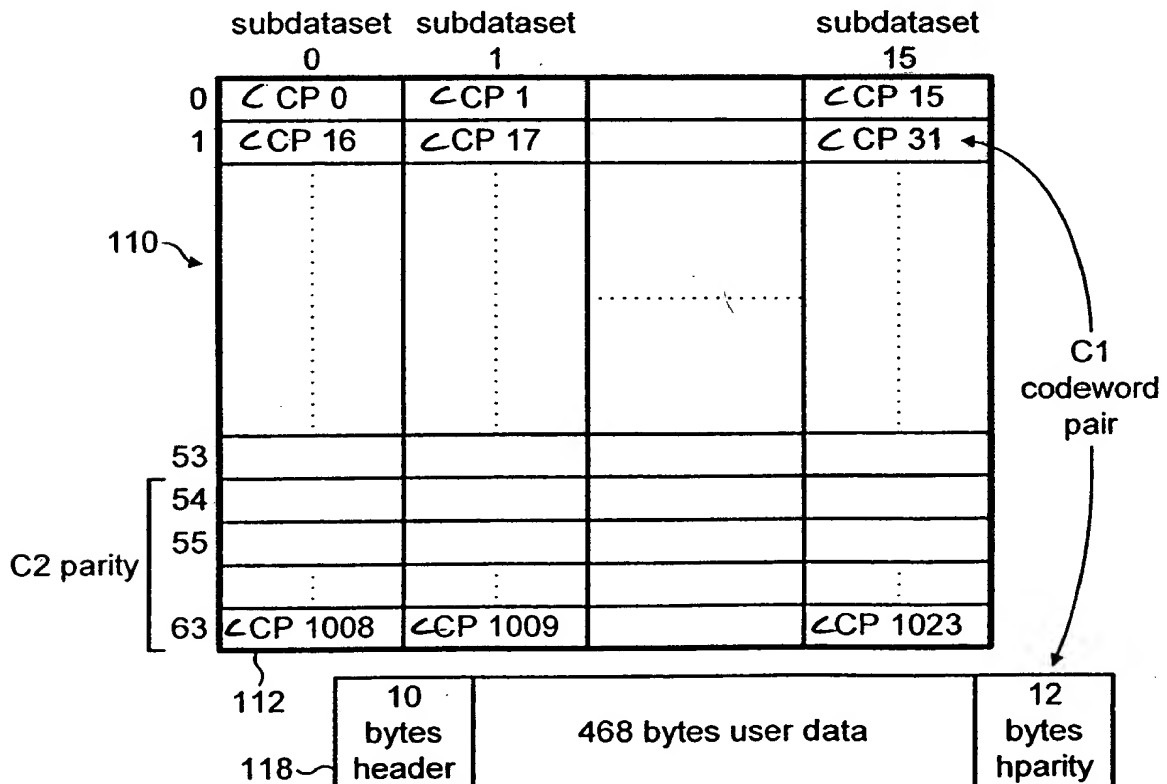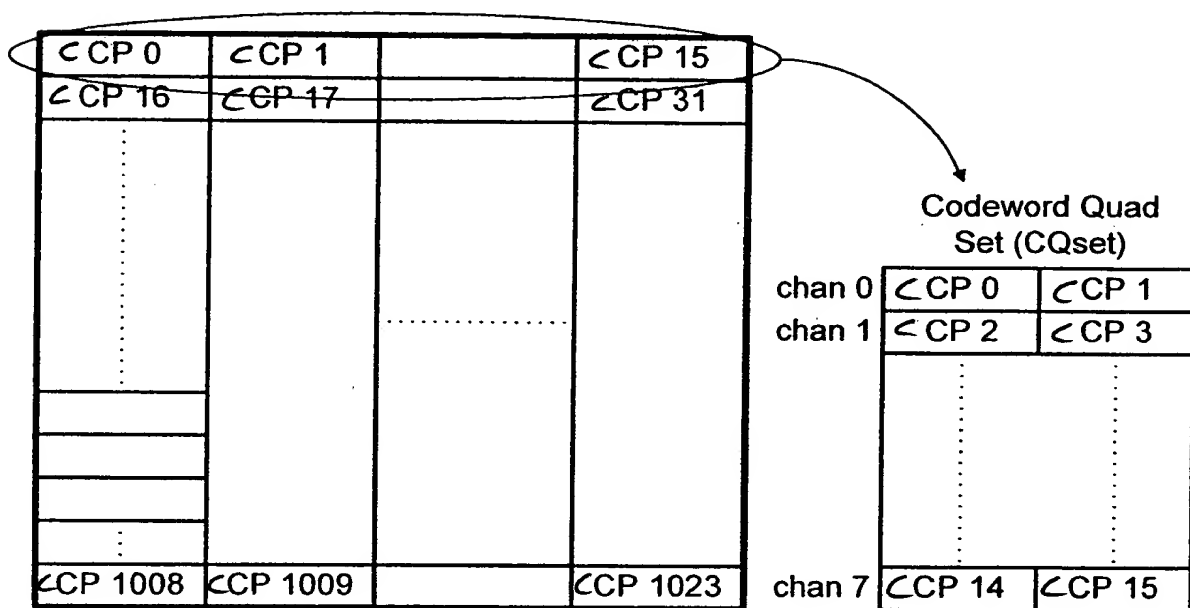
JORGE ANTONIO SVED, JONATHAN PETER BUCKINGHAM

annotated

	CCP 0	CCP 1		CCP 15
	CCP 16	CCP 17		CCP 31
	⋮		⋮	
	CCP 1008	CCP 1009		CCP 1023

Codeword Quad Set (CQset)

	CCP 0	CCP 1
chan 0	CCP 0	CCP 1
chan 1	CCP 2	CCP 3
	⋮	⋮
chan 7	CCP 14	CCP 15

FIG. 3

		Dataset A						Dataset B		
chan 0	DSS						DSS			
chan 1	DSS						DSS			
		CQset 0	CQset 1			CQset 63			CQset 0	
chan 7	DSS						DSS			

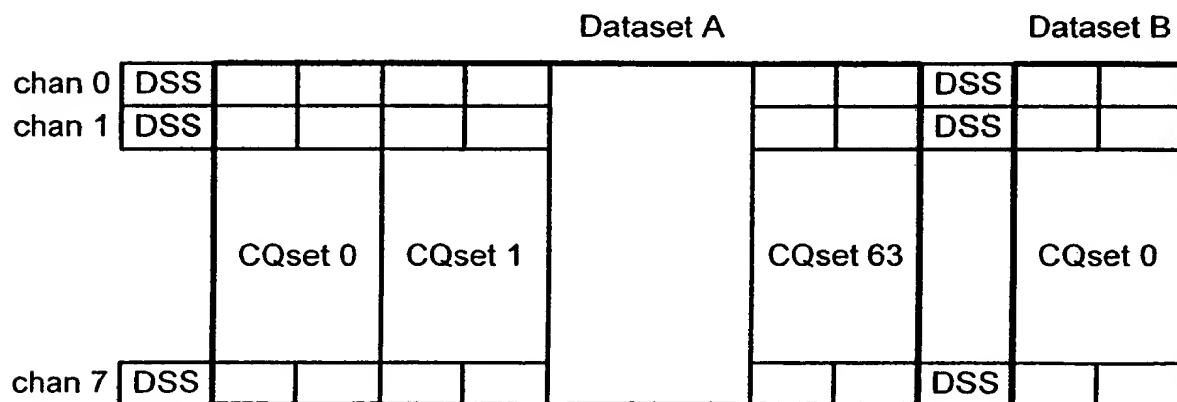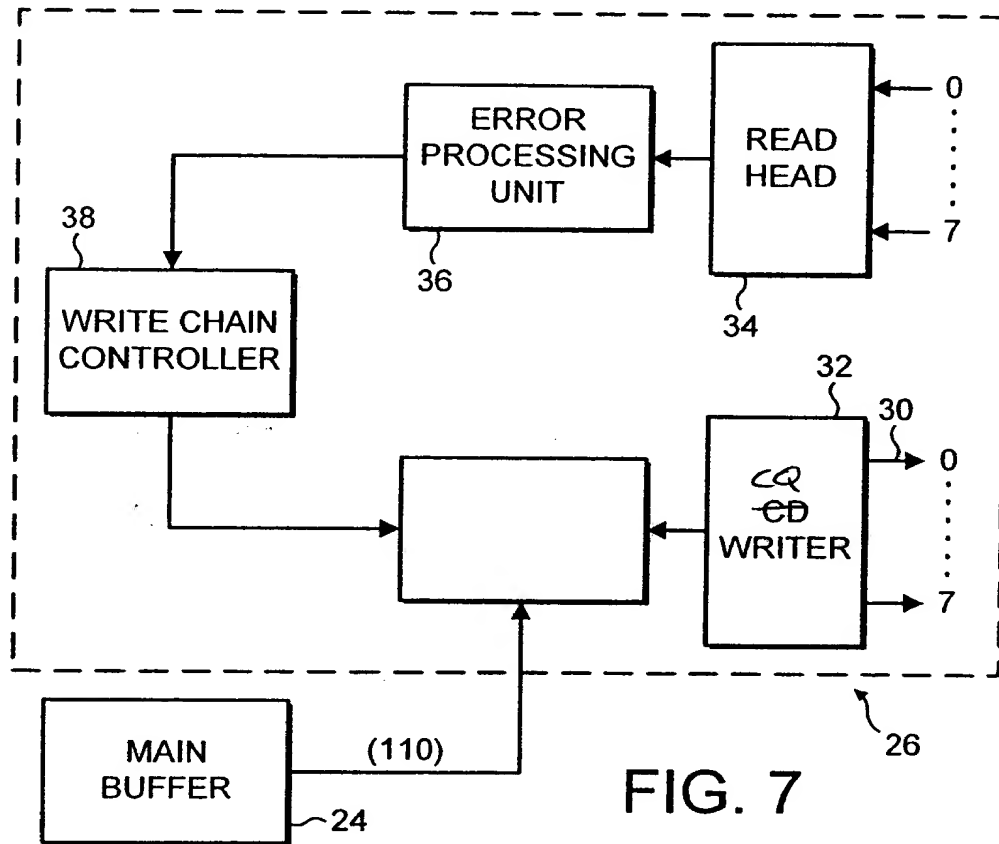**FIG. 4**

QUALITY CONTROL IN DATA TRANSFER & STORAGE APPARATUS (30010276)

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annotated

FIG. 7

Bit name	Bit	Description
good_ccqs(0)	0	1 => CCQs marked 0000 are *good* 0 => CCQs marked 0000 are *bad*
good_ccqs(1)	1	1 => CCQs marked 0001 are *good* 0 => CCQs marked 0001 are *bad*
good_ccqs(N)	N	1=> CCQs marked N_{bin} are *good* 0=> CCQs marked N_{bin} are *bad*
good_ccqs(14)	14	1 => CCQs marked 1110 are *good* 0 => CCQs marked 1110 are *bad*
good_ccqs(15)	15	1 => CCQs marked 1111 are *good* 0 => CCQs marked 1111 are *bad*

FIG. 8